DOCUMENT RESUME

ED 344 580 IR 015 530

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TITLE Social Learning and Electronic Communication: Development of a Conceptual Framework.
PUB DATE 92
NOTE 10p.; Paper presented at the Annual Conference of the Association for Educational Communications and Technology (Washington, DC, February 7, 1992).
PUB TYPE Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Communication (Thought Transfer); *Computer Networks; *Discussion Groups; Distance Education; *Electronic Mail; Graduate Students; Higher Education; Models; Nursing; Socialization
IDENTIFIERS *Computer Mediated Communication; *Consensus Models

ABSTRACT

The purpose of this paper is to describe an evolving conceptual framework resulting from the use of a computer mediated discussion assignment in a graduate nursing course over the past several years. The objective has been to build a consensus among classmates via electronic communication concerning readings about making new knowledge more available for use by persons in daily work. To accomplish the assignment, students were given an orientation to the electronic mail system. Then, through use of a computer group alias, students sent messages to all of the members of the class and the instructor at one time, much as a person would communicate to all members in a live discussion group at one time. The class has been taught three times with this assignment, and similar results have been observed each time. Although students varied in the ways they attempted to synthesize ideas toward a consensus, at the end of the course communications showed a definite merging of ideas. Each time students evaluated the assignment as a positive learning experience. They appreciated the opportunity to interact with classmates on electronic mail and to gain a sense of the ideas of the entire class over the term. The consistency of students' responses in emphasizing the social aspect when communicating for a specified purpose on electronic mail has suggested a beginning conceptual framework. (25 references) (Author/DB)

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SOCIAL LEARNING AND ELECTRONIC COMMUNICATION: DEVELOPMENT OF A CONCEPTUAL FRAMEWORK

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Paper presented at the Annual Convention of the Association for Educational Communications and Technology, Showcase of Achievement, AECT '92, Capture the Vision. Washington, D.C. February 7, 1992.

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SOCIAL LEARNING AND ELECTRONIC COMMUNICATION: DEVELOPMENT OF A CONCEPTUAL FRAMEWORK

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Abstract

The purpose of this paper is to describe an evolving conceptual framework resulting from the use of a computer mediated discussion assignment in a graduate nursing course over the past several years. The objective has been to build a consensus among classmates via electronic communication concerning readings about making new knowledge more more available for use by persons in daily work. To accomplish the assignment students were given an orientation to the email system. Then through use of a computer group alias, students sent messages to all of the members of the class and the instructor at one time, much as a person would communicate to all members in a live group discussion at one time. The findings showed that students varied in the ways they attempted to synthesize ideas toward a consensus. At the end of the course, during the three times the course was taught that included this assignment, communications showed a definite merging of ideas. Each time students evaluated the assignment as a positive learning experience. They appreciated the opportunity to interact with classmates on email and to gain a sense of the ideas of the entire class over the term. The consistency of students' responses in emphasizing the social aspect when communicating for a specified purpose on email has suggested a beginning conceptual framework.

Conceptual Framework

The major concepts in the conceptual framework are person, group, social effect, communication, and learning. Related concepts are mediation, codification, systems and technology. Each of these concepts interrelates and is viewed within a continually changing overall environment. In keeping with Actualizing Theory for nursing education (Albrecht & Lyness, 1992, in press), the person who is the learner is of primary importance and instructional efforts center on facilitating the education of the student as a person who learns. Part of the learning is intentional and derives from carefully prepared educational goals. Another part of the learning is incidental more as a result of spontaneous attention given to certain occurrences. Some of the incidental learning may result from the socialization process as students and colleagues discuss matters informally. In between intentional and incidental learning, are varying blends of both and as the student develops personally and professionally these dynamic blends are encountered. The computer mediated discussion assignment is viewed as a blend of intentional and incidental learning.

Background

The Course. This graduate doctoral nursing course, has been offered at a northeastern university since 1988 and concerns the structuring of nursing knowledge. Much of the course emphasizes ways that knowledge is organized and designed for access. During the term students build a beginning knowledge structure in a narrowly defined area of nursing that is their area of interest. Part of the course deals with developing a computer database to serve as a personal file of published works according to designated categories considered to be important. Another part of the course deals with ideas and their relationships surrounding their area of interest and found in the literature. Students do a review of the literature and analyze it. This gives the students opportunities to reflect on the ideas of many persons and to determine similarities and differences in viewpoints. Eventually the students are able to synthesize the material into meaningful themes. To enhance students' synthesizing skills, the consensus building assignment was initiated.

Consensus Building

Considered both a scholarly and practical process, consensus building involves the exchange of ideas among persons and a gradual synthesis of the ideas. The ideas are usually identified from the literature initially and analyzed for gaps or conflicts (Ward, 1983). Eventually a bridging of the ideas occurs when the participants know that consensus is the objective. One of the practical outcomes is that complex research work can be unified by bringing about understanding and a greater degree of agreement in areas of difference among the participants. A large area of work may be achieved with greater effectiveness and efficiency as a result. Electronic communication is a way to exchange ideas among persons who work together on a project.

Electronic Communication

Electronic communication permits exchanging messages via phone modem or direct cabling (Staggers, 1989) via terminal emulation software. Common forms of electronic communication are electronic mail (email) and electronic bulletin board systems (BBS). Through email, messages can be read or sent at the person's convenience and even persons who participate less readily in face to face group discussion, may participate in an exchange through email (Phillips & Santoro, 1989).

Email messages can be sent and received within minutes. With the rapid growth of information in the world today, timely access to communication formats such as electronic communication is an imperative. Email provides the user with the power to access needed information; published or directly communicated information from person to person. Email systems may be categorized by access potential and by distance. Some systems, such as private email systems operate on Local Area Networks (LANs). These systems usually have very limited access, perhaps to members of only one institution. Other email systems include public systems such as AT&T, MCI and Western Union's Easy Link. Semi-public systems such as CompuServe offer access to the public at large by subscription.

Some systems such as Bitnet and Internet have university support. Directly wired computers tend to allow communication locally within a short distance as within one or a group of buildings located in close proximity.

As information transmitted electronically increased over the years, collection of certain types of information into database systems and electronic bulletins boards represented a natural progression of events. The BBS is a central data storage network designed for organized access by many users. Some allow two way communication. At present there are more than 3,000 databases of information online and over 10,000 public electronic bulletin boards (Dvorak & Anis, 1990). Services provided by BBSs include information from newspapers, newsletters, journals, organizations and recruitment services. Examples of BBSs and databases in nursing include: Nightingale BBS, Nurse Corner, Health Link (Skaggs, 1990) and the International Nursing Library of Sigma Theta Tau, International (Hudgings, 1990). NurseLink , an international electronic bulletin board that originated in 1987, has been revised to continue to make it more useful. It carries announcements, newsletter articles and other types of information of interest to nurse researchers and scholars (Skiba & Warren, 1991). Through E.T.Net (Educational Technology Network), a part of the National Library of Medicine's Lister Hill National Center for Biomedical Communications, a new electronic conference on nursing care research called NUCARE (NUrsing CAre REsearch) now aims to facilitate the exchange of important research information among nurse researchers (NLM, 1991). The expansion of these electronic forms of communication in nursing, make it especially timely that the graduate nursing student has opportunities to acquire knowledge and practice skills of electronic communication.

Studies are being reported that attest to the interest in using electronic communication for instructional purposes. For example, in a Speech Communication Project at the Pennsylvania State University, a study involving electronic communication for instruction was done. In this study a traditional group discussion course was redesigned to operate via computer mediated communication. Findings indicated more frequent student contact with instructors, high level of course approval by students, and group output that equalled or exceeded that of the traditionally taught course (Philips & Santoro, 1989). At the University of Lille in France, students in one group using a computer mediated conference format, worked on solving math problems collectively. In another group, they wrote a summary report collectively related to the economics of a company (Derycke, Clement, Ladesou & Vieville, 1991).

The convenience of electronic communication is especially useful for the graduate student who may commute to school, live a distance of one to two hours away, be a part time student with a full time job and have personal and family responsibilities. Email and a group alias, similar in function to a local bulletin board, were available in the setting and it seemed appropriate to use as part of the teaching strategy for students to build consensus.

Electronic communication served as a convenient vehicle for students to review the concepts and categories of concepts in the messages from the class and to consider strategies to bring together the ideas of others.

Social Learning

A powerful aspect to a class assignment directed toward consensus building involves social learning among peers. This type of learning can be important for students at various levels (Bouton & Garth, 1983; Breckfield, 1986; Cohen, 1984; Johnson, Maruyama, Johnson, Nelson & Skon, 1981). It is particularly important for developing professionals who continue to network and exchange specialized knowledge among peers throughout their careers. Progress in science requires communication between scientists (Cole & Cole, 1973). " As a consequence, the factors that affect communication, such as whether the mode is face to face or electronic, may influence research process and progress "(Carley & Wendt, 1991, p. 406). What is communicated is done in the context of having an audience with opportunities for feedback and revision (Heap, 1989). An ongoing exchange can occur that incorporates components of the group process (Homans, 1958) and brings together individual ideas into a more cohesive, comprehensive or innovative perspective as a result of synthesis. This is the essence of consensus building.

Consensus building is viewed as closely associated with social learning. Individual views are offered and then synthesized following an identification of concepts and relational statements. Within a social learning environment, individuals apply efforts to reach a common ground. This may require many communication exchanges and periods of reflection about new ideas as they enter the discussion. Electronic communication makes possible convenient exchanges of information to facilitate the many messages directed to building a consensus. It becomes a socially and technologically mediated learning environment.

Social Learning as described by Bandura in 1977 can still be seen to apply where persons interact through computer based means. In his delineation of the main components of social learning theory, Bandura emphasized the powers of human observation to learn and take on highly integrated and complex behaviors from others. Through this process people use symbols to help represent events and to communicate meaningfully with others even over distances. People are active learners, not simply reactive. They have self directing capacities by which they select, organize and transform environmental stimuli of importance to them (Bandura, 1977). During a computer mediated discussion assignment, students actively participate in the discussion. Although many of the personal features and expressions that would be apparent during a face to face group discussion are invisible when communicating by email, certain nuances of expression begin to be observed as the student works longer with email. Some individuals make sure the spelling is entirely correct; others type quickly and let the typos or spelling errors remain.

Some use many small paragraphs set off by indentions or headings; others create one continuous paragraph for the whole message even when it is large. Some use slang; others remain more formal in language. Some refer to specific messages sent to the group alias; others communicate about the pool of messages in the alias in a more general fashion. Some use accent symbols such as the exclamation mark plentifully; others do not. All of these socially oriented expressions are occurring while the ideas are being exchanged and merged toward consensus building.

Not only is text communicated through electronic means, increasingly other forms are being communicated. "The use of electronic forms of symbolic communication is increasing the bandwidth of human-computer interaction. Images, graphs, charts, and iconic symbols are routinely used to facilitate communication" (Grantham, 1991, pp. 21-22). Emerging graphical computer capability will allow nontext forms of communication to be used in many communications of the future. There could even be possibilities for graphical communication in consensus building. Graphics may be used to enhance understanding of certain concepts that are difficult to convey.

Concepts and Codes

Developing categories of concepts is used by people during consensus building. The history of categories for concepts is very long. This is a basic activity that helps to make the chaotic universe more orderly and understandable. If categories were not devised, then learners would have to treat every new experience as the first one. This is seen as an overwhelming burden to the intellect and unnecessary. At the same time however, learners have to watch out for pitfalls in developing categories because coded structures can contain or conceal errors and value laden biases. The categories in the language used needs to be examined in that "language is already in itself a form of classification because of the categories of thought implied in the grammar and syntax" (Menninger, 1963, p. 15). Clusters of symbols become embedded in a category, some more easily determined than others (Homa, 1984). It is useful to look back at early writings to see how arguments containing categores of concepts offerred then fit with what is known today. As the ideas become clearer, definitions are shaped. In terms of a definition for category, that which assigns a common name to an arbitrary collection of stimuli is seen as a simple but yet inclusive definition. In nursing and the health sciences, the complexity of categories is a challenge for researchers to communicate in any format; face to face or computer mediated.

To consider mediation, as is seen in computer mediated discussion, and codification operating together as part of reality with particular importance to the dynamics of thought, is not to consider completion and perfection. Issues surround these functions. In the 1960s, Kendler and Kendler, within a psychology context, cautioned that mediation can be used so broadly that it seems like a vague term not actually attached to any specific methodology.

The authors provided a review of others' works intended to help clarify the meaning of mediation. They discussed their own research that used mediation in thinking and highlighted the complex thinking of college learners who could apply a number of mediated and symbolic links in discriminating different patterns of stimuli (Kendler & Kendler, 1963). Through mediated thinking, a competent adult learner could quickly sort out a variety of symbolic codes or categories. Practice in this process may benefit the student in the health sciences who is often confronted by a very large amount of information that changes as scientific advances produce changes related to health.

Not only is mediation problematic in its potential to be vague, it may also be used in a limited materialistic way. The popular use of media as physical, audio-visual or computer based material alone may constrict the understanding of mediation. This is a paradox. On the one hand, mediation is seen as too broad and floating and on the other hand, too confined to the material environment. A compromise position that seems practical is to view mediation as an interposing function, an ability to move, and a capacity to change form. That form can be intellectual, affective, or performing in nature. It can be tacit or outwardly expressed. It can be represented via a person expressing now or can be a product of prior human thought.

Findings

In each of the classes similar results have been observed.The learning objective was to build a consensus related to several readings that dealt with ways to disseminate new knowledge to greater numbers of people. Students used a variety of ways to create links between ideas. A few examples include: a) stated similarities and differences in the readings; b) reasoned logical relationships; c) identified global concepts and subconcepts; d) paralled some of the ideas with observations made in real life situations. Over the weeks of the term students could be seen identifying with the content. First and second person pronouns began to be used. For example, "We have to find ways to make scientific findings available for nurses in practice." In the most recent class, one student stated, " I now can appreciate the value of a book that emphasizes preparing for disseminating research information." At this time the book, Getting the word out (Cabinet, 1991), that involves sharing research, was the center of the discussion.

Implications for Education

Within the social learning experience, students identify main positions, that is viewpoints offered on a topic, extracting the concepts from the positions and organizing the concepts into categories. When the goal is to build a consensus, students develop relational statements that establish logical and practical connections between concepts provided by different persons. In the case discussed here, the persons were all the students in the class. Consensus, however may also be attempted through relational statements developed among concepts and categories taken from the literature. This means that the social learning environment can expand beyond the classroom and move into the larger published society.

Practice in consensus building can help the student develop as a professional. Email permits rapid, frequent and convenient exchanges of information for the student to ponder over, analyze and come to understand in greater depth. The information supplied in the discussion can offer a rich resource of ideas. Using electronic communication to gain this experience offers the added benefit of more practice and know how with the computer.

Summary

Social learning and electronic communication appear to augment each other in a number of important ways: a) Rapid communication is possible to many persons locally and at a distance. b) Social exchanges increase and can vary greatly in their blends. c) Time independence of communications makes possible a classroom that is always available thus promoting self pacing, self direction, and a sense of control of the time factor by the learner (Harasim, 1990). d) When the goal is to build a consensus among persons in the social learning situation, electronic communication makes possible continued review of code structures in the messages on the screen or in printouts as concepts and categories are identified. This identification is done as part of organizing and synthesizing the information.

The use of electronic communication to practice consensus building has been appreciated by the students. This teaching strategy is emerging as a way to better understand the framework of learner experiences that are seen as encompassing social as well as cognitive, situational and environmental components.

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